C24 CDMA Module

Delivering seamless mobility to the M2M world

Hello CDMA.

- Dual Band (800/1900Mhz)
- GPS
- Ext. RF
- Internal TCP and UDP
- SSL - Secure Connection
- FTP - File Transfer
- MUX
- OverThe Air
- Ext. Temperature
- RoHS
- Fully Type Approved
- 24 Family Form Factor

Say Hello to the C24, a CDMA solution designed using our "24" family compact form factor, continuing Motorola's tradition of expanding and innovating its M2M portfolio. The C24 enables seamless connectivity over CDMA networks for your M2M needs.

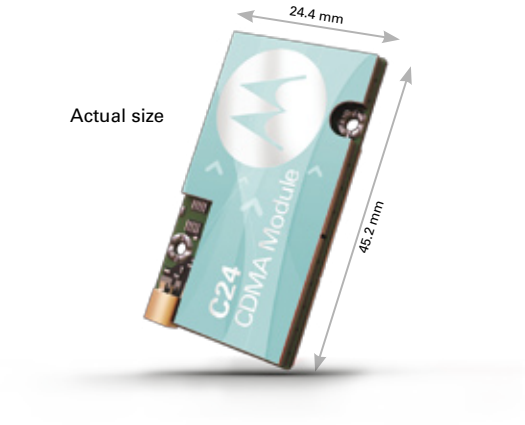
Dependable innovation.

The C24 not only gives you dependable Motorola quality, you also get an innovative CDMA solution. We've designed the C24 using all we've learned to provide a fully featured wireless module that utilizes the CDMA network for expanded M2M possibilities. The C24 also gives you on-board GPS capabilities – making it the ideal choice for fleet management, asset tracking and other location-based wireless applications.

The flexibility you need.

Don't let network constraints hold back your M2M solution. Need to access a CDMA network now but want access to GSM in the future? The new C24 is built on the same "24" form factor as the rest of the Motorola module family, giving you flexibility with a single design solution. Already utilizing a GSM network? Motorola helps you easily transition to CDMA with our unrivaled customer support. With easy interchangeability between GSM and CDMA technology, you can finally design your M2M applications to take advantage of truly global coverage.

Actual size



Endless opportunities.

Have an extensive local broadband Wi-Fi network but need real-time access for remote data communication? The C24 can be stacked seamlessly with the W24 for smooth Wi-Fi to CDMA data routing. Further leverage your existing designs for fast and easy integration for applications requiring both communication types, like fleet management, security or AMR devices. This dual use is just another way we're putting more seamless mobility in your M2M world.

Anticipating your needs.

The C24 is designed to be a practical solution. Built-in internet and security protocols allow easy integration so you can get to market faster than ever. But it doesn't stop there. We know technology doesn't stand still, so we've designed the C24 with flexibility in mind. The C24 features firmware upgradable over the air (FOTA) which keeps you up and running, allowing future upgrades to be implemented instantly, eliminating costly and time consuming maintenance activities.

The Motorola commitment.

For 80 years Motorola has been a pioneer in the communication industry. Whether we're working with you to deliver an innovative solution or assisting you with your needs from the design phase to accreditation, Motorola is here for you. Our renowned commitment to quality and dedicated support continue to set the standard for M2M.

360° OF CUSTOMER SUPPORT

Don't let the complexity of CDMA hold you back in any way. As a pioneer and leader of the wireless industry, Motorola understands your needs. Therefore not only do we provide you with innovative technology and quality engineering to deliver a successful product, but we are also committed to providing you with true comprehensive customer support and all the tools you need so your CDMA solution can go to market faster than ever.

Making logistics easier

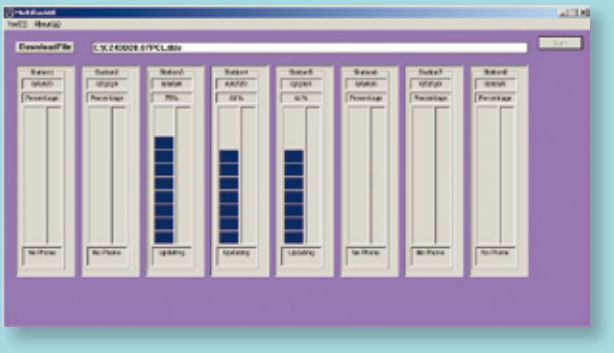
We've enhanced logistics for superior flexibility in stock management, and fine tuned the process of provisioning the C24, making it more efficient than ever.

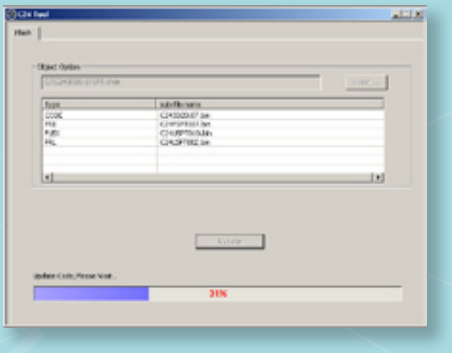
Stock & Service

- Flexibility to purchase the C24 without committing to a specific wireless carrier
- Motorola handles all aspects of EDI (Electronic Data Interchange) once you decide on a wireless carrier
- Motorola provides on-demand carrier configuration files (PRI/PRL)

Efficient Provisioning

- Fast construction, testing, & verification of PRI/PRL files for nearly any wireless carrier of your choice
- Multiflash PST (product service tool) for simple & efficient flashing of up to 8 modules simultaneously over a standard high-speed USB interface
- Multiflash PST conveniently operates on any PC running Windows XP





Enabling GPS Solutions

The C24 features a powerful simultaneous multimode GPS, allowing operation of the GPS in parallel with placing CDMA 1X voice & data calls, making it ideal for any location-based application. The C24's multimode GPS supports Autonomous GPS, Assisted GPS and MS-Based GPS.

Antenna Evaluation & Integration Assistance

To ensure fast evaluation of the C24's simultaneous GPS & CDMA capabilities, we provide an antenna splitter with our "24" family evaluation board, so you can benefit from:

- Easy connectivity to the C24's single MMCX antenna connector
- Antenna splitter that is compatible with standard off-the-shelf CDMA & GPS antennas (passive & active)
- An antenna splitter reference design for easy integration of the C24 and its GPS capabilities into your proprietary application

Worldwide Approvals

Motorola is determined that our modules receive approval by leading wireless carriers all around the globe. We're committed to assisting you by seeking carrier approval for practically any carrier you request, worldwide.

With Motorola you're getting a piece of mind, knowing your module meets the strict quality requirements of the world's leading CDMA carriers. It's our goal to ensure your solution works anywhere your customers are.

COMPREHENSIVE DEVELOPMENT SUPPORT

Motorola is committed to ensuring that integration of the C24 into your proprietary application is as effortless as possible. We provide you with unmatched customer support and a full development toolkit which includes the following:

- **"24" family evaluation board** – an intuitive tool for rapid development, allowing easy access to the full range of our modules' capabilities. The evaluation board fully supports all of our modules, allowing them to be easily interchanged without the need for modification if you're transitioning between technologies.
- **C24-G24 Delta Guide** – documentation outlining command and pin differences between the C24 and G24 modules, ensuring a simple transition from GSM to CDMA or vice-versa.
- **Complete hardware & software interface guides** – a full range of user manuals to assist with all aspects of module integration and application development.

C24 CDMA Module

Product Features

Supported Bands

- CDMA Dual Band 800/1900 MHz
- Multimode GPS (Standalone and Assisted) 1575 MHz

Physical

- Size: 24.4 x 45.2 x 5.6 mm (6.4mm stacking height)
- Mounting: two 2.4 mm holes
- Weight: 9 gram

Environmental

- Operating temperature: -30°C +85°C
- Storage temperature: -40°C +85°C

Firmware Upgrade

- Firmware upgrade Over-the-Air (FOTA)
- OMA-DM 1.2 Compliance

Performance

Operating Voltage

- Voltage: 3.3V - 4.2V

Current Consumption

- < 2.5mA @ SCI2 (Sleep mode)

TX Power

- 800 MHz – Class 3 (24 dBm)
- 1900 MHz – Class 2 (24 dBm)

Typical RX sensitivity

- -108dBm (4dB margin on top of spec)

Interfaces

Connectors

- Single 70 pin board to board
- RF MMCX
- R-UIM Card - 3.0V / 1.8V

Connectivity

- USB 2.0 full speed
- UART: BR from 300 bps to 230400 bps
- Two physical UARTs – UART1 for AT commands & Data, UART2 for NMEA or R-UIM
- MUX 27.010 Support

Regulatory and Approvals

- CDG1, CDG2
- FCC, IC, CCC
- EMC
- QS9000 manufacturing
- RoHS/WEEE

Data Features

- Data Capabilities: 1x/QNC/HSPD
- Embedded TCP/IP and UDP/IP protocol stack
- Embedded FTP
- SSL - Secure Connection

CSD

- Max BR 14.4 Kbps

SMS

- MO / MT Text and PDU modes
- Cell broadcast

GPS

- Binary and NMEA modes

FAX

- Group 3, Class 2

Voice Features

- Telephony
- Digital audio
- Analog audio
- Vocoders 13K QCELP/EVRC/ EVRC-B
- E911-Call
- DTMF support
- Audio control: echo suppression; noise suppression; side tone; gain control

CDMA Supplementary service

- Call forwarding
- Call hold; waiting; multiparty
- Call diverting
- Call barring
- Three way Calling

Character Set

- UTF8
- UCS2
- GSM
- ASCII
- 8859-1

Control / Status Indications

- 8 GPIO's
- 3x A/D general purpose converters
- CDMA Network coverage
- Wake up in/out
- Antenna presence detect
- Voltage sensor

AT Command Set

- Motorola proprietary AT commands
- Qualcomm proprietary AT commands
- Operator proprietary AT commands

Accessories

- Firmware data loader over serial connection
- Data logger
- Developer Kit

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